

#### Memorandum

To: Diane Salkie, EPA Region 2

Elizabeth Franklin, USACE

From: Troy Gallagher, CDM Smith

Date: November 27, 2019

Subject: Summary of Oversight of Physical Water Column Monitoring

September 6-7, 2019

Lower Passaic River Restoration Project

On behalf of the United States Environmental Protection Agency (EPA) and the United States Army Corps of Engineers (USACE), Kansas City District, CDM Federal Programs Corporation (CDM Smith) traveled to the Lower Passaic River Study Area (LPRSA) on Friday, September 6 through Saturday, September 7, 2019 and provided field technical oversight for the second round of surface water sampling associated with the Physical Water Column Monitoring (PWCM) program.

Transect sampling at river miles (RMs) 12.0 and 13.5 began on Friday, September 6, including the collection of split samples by CDM Smith, and was concluded on Saturday, September 7 with the transect sampling at RM 10.2 and 8.4 and the identification of the salt front for longitudinal transect sampling. Oversight on both days was provided by Troy Gallagher of CDM Smith. Field activities were conducted by Ocean Surveys, Inc. (OSI) and AECOM on behalf of the Cooperating Parties Group (CPG). Anchor QEA provided field support on behalf of the CPG.

The fixed point monitoring locations are presented in Figure 1 from the CPG's quality assurance project plan (QAPP). Oversight was conducted in accordance with CDM Smith's Final QAPP for PWCM, dated August 13, 2019. Photographs of field activities are presented in Attachment 1. A copy of the field logbook notes is provided in Attachment 2. A copy of the sample tracking log is provided in Attachment 3.

Diane Salkie and Elizabeth Franklin November 27, 2019 Page 2

### Summary of Friday, September 6, 2019 Field Activities

#### **Personnel in Attendance**

Troy Gallagher – CDM Smith
Jeff Pydeski – OSI
Alexandra Allen – OSI
Steve Howe – AECOM
Mike Tatarelli – AECOM
Clare Murphy-Hagan - AECOM
Chris Yates – Anchor QEA

All personnel met at the 1 Madison Street boat dock in Rutherford, New Jersey. OSI and AECOM rode in OSI's boat, which was equipped with equipment for sampling. Anchor QEA and CDM Smith were aboard a separate oversight boat.

All personnel mobilized to RM 12.0 to begin collecting the flood transect. Facing upstream, seven locations were measured or measured and sampled from left to right. For the duration of the transect, flow data was obtained from a boat-mounted acoustic doppler current profiler (ADCP). Vertical water quality parameter profiles were collected from all seven positions using a YSI. Surface water samples were collected from positions 2, 4, and 6 at two depth intervals (surface and bottom), in accordance with the approved QAPP. For all sample locations, the bottom depth interval was sampled first, following a vertical YSI profile from surface to bottom. CDM Smith split samples were collected from all three sampling positions, with the sample names 19D-CE02-T120-P2AS-CDM (from the top sampling depth at location 2), 19D-CE02-T120-P4BS-CDM (from the bottom sampling depth at location 4), and 19D-CE02-T120-P6AS-CDM (from the top sampling depth at location 6).

All personnel mobilized to RM 13.5 to begin collecting the flood transect. Samples and YSI profiles were collected as described above. CDM Smith collected split samples from positions 2 and 4 with sample names 19D-CE02-T135-PSB2-CDM (from the bottom sampling depth at location 2) and 19D-CE02-T135-P4AS-CDM (from the top sampling depth at location 4). A duplicate sample was collected from the top sampling depth at position 4, with the sample name 19D-CE02-T135-P4AS-CDM-100. Both boats mobilized back to the 1 Madison Street dock to wait for the ebb tide.

Troy Gallagher packed all split samples collected the morning into coolers to be shipped through FedEx to Katahdin laboratory. All samples will be analyzed for suspended solids concentration, dissolved organic carbon, and particulate organic carbon. After dropping both coolers at FedEx, Troy Gallagher mobilized back to the 1 Madison Street dock to oversee the ebb tide sampling. No more split samples were collected for this sampling event.

When the tide shifted to ebb, all personnel mobilized to RM 12.0 to collect the ebb transect. Chris Yates was no longer on site for the ebb tide sampling, and Troy Gallagher was aboard the OSI vessel to

Diamond\_Alkali\_OU4\_PWCM\_Oversight-Sept 6

Diane Salkie and Elizabeth Franklin November 27, 2019 Page 3

oversee the rest of the sampling on this day. Samples and YSI profiles were collected as described above. At position 6, only one sample was collected by AECOM due to how shallow the water was in this location; the one sample was collected from mid-depth.

All personnel mobilized to RM 13.5 to collect the ebb transect. Samples and YSI profiles were collected as described above. Following the RM 13.5 flood transect completion, all personnel mobilized back to the 1 Madison Road boat dock and secured the boats for the night.

### Summary of Saturday, September 7, 2019 Field Activities

#### **Personnel in Attendance**

Troy Gallagher – CDM Smith Jeff Pydeski – OSI Alexandra Allen – OSI Steve Howe – AECOM Mike Tatarelli – AECOM

All personnel met at the 1 Madison Street boat dock in Rutherford, New Jersey. OSI, AECOM, and CDM Smith all rode in the OSI vessel. No split samples were collected by CDM Smith during this day's activities.

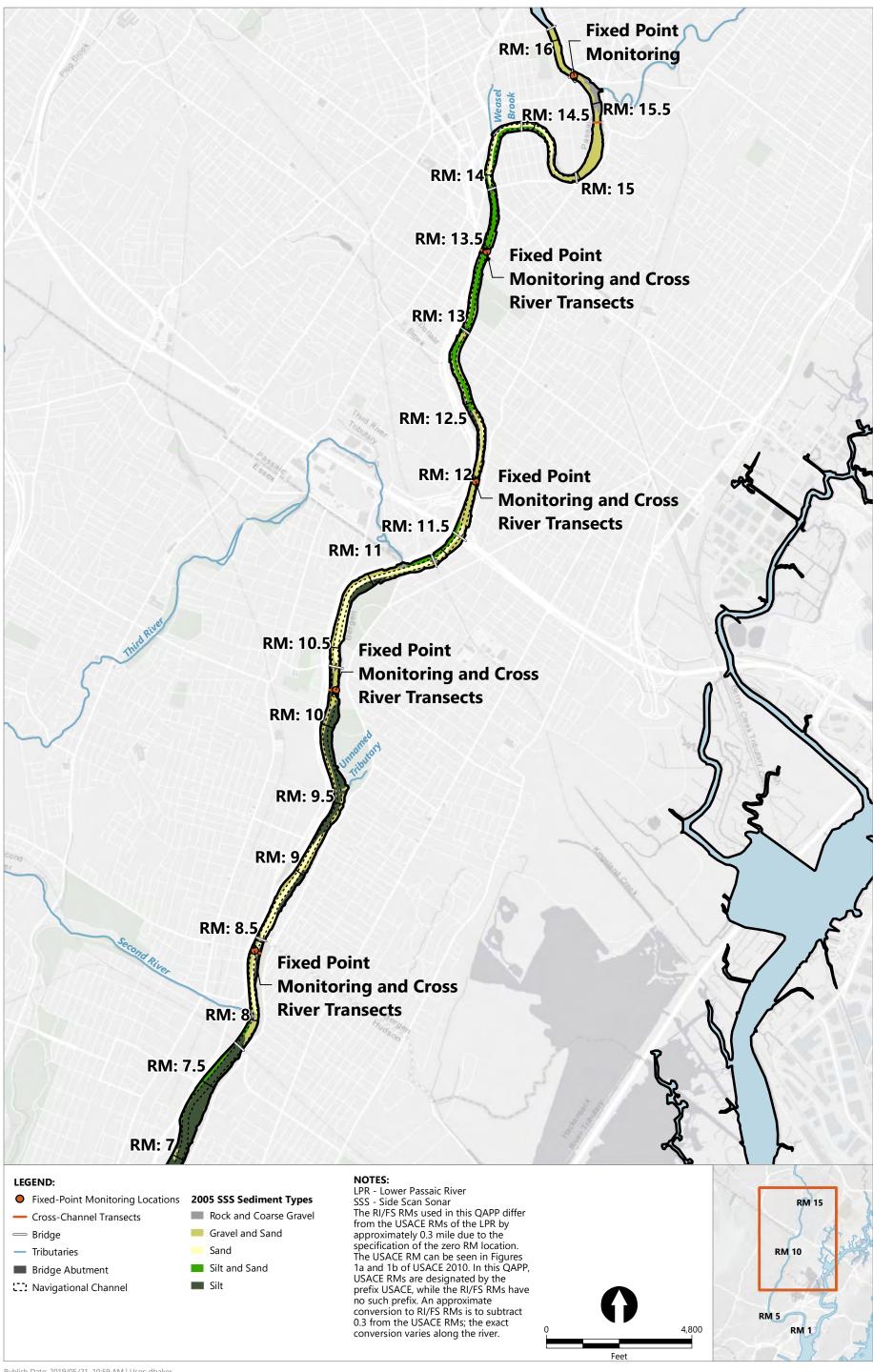
All personnel mobilized to RM 10.2 to begin collecting the ebb transect. Facing upstream, seven locations were measured or measured and sampled from left to right. For the duration of the transect, flow data was obtained from a boat-mounted ADCP. Vertical YSI profiles were collected from all seven positions. Samples were collected from positions 2, 4, and 6 at two depth intervals (surface and bottom), in accordance with the approved QAPP. For all sample locations, the bottom depth interval was sampled first, following a vertical YSI profile from surface to bottom.

All personnel mobilized to RM 8.4 to collect the ebb transect. Samples and YSI profiles were collected as described above. Following the RM 8.4 ebb transect completion, all personnel mobilized downstream to find the 2.2 ppt salt front to prepare for longitudinal transect sampling. The 2.2 ppt salt front was found south of the railroad bridge south of RM 8.4, adjacent to the abandoned house on the east river bank. The field crew mobilized back to the 1 Madison Street dock to wait for the flood tide to begin.

Once the flood tide began, the crew mobilized to RM 8.4 to begin transect sampling. Samples and YSI profiles were collected as described above. The crew then mobilized to RM 10.2 where samples and YSI profiles were also collected. This completed the sampling event for this day.

The longitudinal transect sampling was completed on Sunday, September 8; however, no oversight was provided by CDM Smith due to lack of room on the OSI vessel.

## Figure 1



Publish Date: 2019/05/21, 10:59 AM | User: dbaker Filepath: \\Boston1\jobs\Passaic\_CPG\DOCUMENTS\2019\Current\_Conditions\_Physical\_WC\_QAPP\source\RM7.8\_to\_DD\_Map\_monitoring\_locations\_FullExtent.mxd

# Attachment 1 Photographs of Field Activities

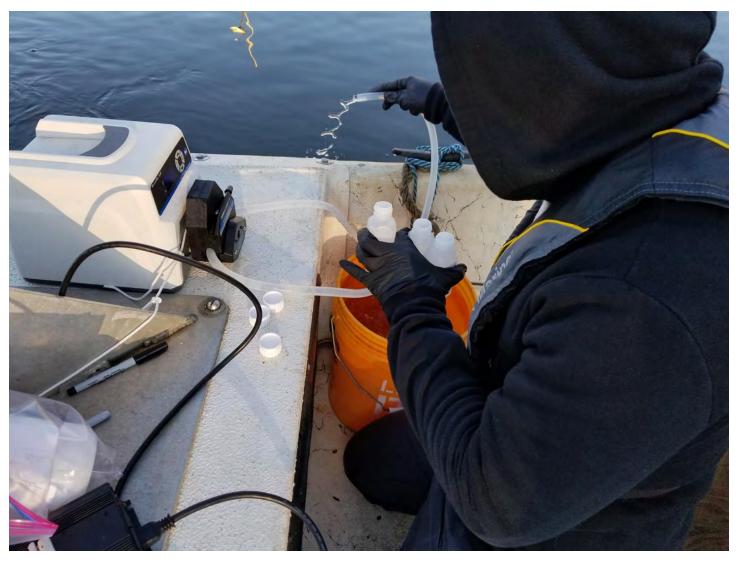


Photograph 1: AECOM preparing sample containers for sampling. 09/07/2019



Photograph 2: AECOM labeling sample containers to be used for sampling while OSI performs vertical profile with the YSI.

09/07/2019



Photograph 3: AECOM using the peristaltic pump to fill sample containers. 09/07/2019



Photograph 4: OSI holding YSI at sampling depth while AECOM takes samples using peristaltic pump. 09/07/2019



Photograph 5: AECOM filling sample containers using peristaltic pump. 09/07/2019



Photograph 6: OSI performing vertical profile with YSI. GPS mount also pictured, taking coordinates of sampling location. 09/07/2019

Attachment 2

Field Logbook

Location Rutherford NJ Date 9/6/19 Project / Client Lower Passaic / USACE Diamond Alkali OU4/ PWCM + CWCM TG arrives at 1 Madison dock. Weather: 70°F overcast LevelD, PFD PPE: Purpose 1 Conclude oversight of CWCM and begin PWCM. Split samples to be takenfor the PWCM event. 1015 TG labels bottlevare in preparation for sampling. OSI erew is getting all equipment ready on boat. 1035 TG board boats on dock with Alex Allen + Jeff Podeski (OSI) Chris Yates (AQEA), Clore Murphy-Hagan + Mike Tatarelli (AEcom). H+5 briefing conducted. CDM splits will be conducted at 5 PWCM locations, and a dup and Ms/MSD will be collected. Prepare to depart dock and head 1100 to first station to begin PWCM Event 19D. Steve Flowe (AECOM); isos. Arrive @ RM 12.0, Waiting for 1107 OST boat to arrive to begin PWCM sampling event. First CDM split will be collect at the surface location here. - 25 9/6/19

Location Rutherford NJ Date 9/6/19 13 Project / Client LPR / USACE Diamond Alkali OUY/PWCM+CWCM 1125 AECOM setting up to sample @ RM 12.0. Labeling bottleware. AREA boat is anchored away from OSI boot while they get in position. OSI deploys YSI @ PI @ RM 12.0. No sample to be collected here. 1145 AECOM collects samples at P2 @ RM 12.0. CDM split sample also collected from the surface at this 10 cation 19D- CE02-T120-P2AS-COM 1205 OSI deploys YSI at next point on RM 12.0 transect. AECOM prepares to collect samples from P4. CDM split will be collected from this location as well. 19D-CE02-T120-P4BS-CDM 1220 AECOM to sample PG @ RM12.0, 1225 San 16 Samples collected from PG at RM 12.0. AECOM collects their samples as well as the CDM split. 19D - CEO2-T120 - PGAS - COM 1235 Both boats depart RM 12. 0 and head to RM 13.5. -

Location Rutherford NJ Date 9/6/19 Project / Client LPR / USACE Diamond Alkal: OU4/PWCM+CWCM Acrive at RM 13.5 DSI boats scouts transect while AECOM crew labels bottleware. 1300 OSI and AECOM setting up to begin sampling across transect. AECOM to collect first samples at P2 @ RM 13.5. Samples collected @ P2 on RM 13.5. 1305 190 - CEO2-T135-P2BS-CDM 1325 Samples collected from P4 e 13.5, 190-CE02-T135-P4AS-CDM) 19D- CEOZ-T135-P4AS-CDM-100 MS/MSD volume also collected from this location. Both boats head back to dock to end flood tide sampling. TG offsite to buy ice and pack 2 coolers with all splits collected to be shipped for Sat. delivery. TG drops both coolers off at FedEx for delivery, heads back to 1 Madison dock to await ebb fide CWCM + PWCM sampling. 9/6/19

Location Rutherford NJ Date 9/6/19 15 Project / Client LPR / USACE Diamond Alkali OU4/PWCM+ CWCM 1600 TG back onsite, waiting for OST + AECOM crew to board boat. Heavy rains begin. 1700 Board OSI boat and prepare to go to RM 15.8 for final CWCM sample. 1730 Arrive @ RM 15.8. One sample to be collected by AECOM at middepth for CWCM. 1740 Vertical profile performed. Dample to be collected at 8ft. Water quality parameters taken. Sampler collected. 1755 Final parameters and vertical RM 15.8 Portorned Depart From 1830 Arrive @ RM 12.0 to begin PWCM sampling event for ebb tide. No more split samples will be collected today. 1845 Begin measurements & PI w/ YSI 1857 Arrive PZ. YSI measurements taken. AECOM samples collected. from top and bottom. 9/6/19 Rite in the Rain

Project / Client LPR / USACE Date 9/6/19 Diamond Alkali O44/PWCM+CWCM 1910 Vertical profile @ P3 RM 12.0
1915 Vertical profile @ P4 completed.
AECOM collects samples from top and bottom @ P4

1920 Profile @ P5 complete

1933 Profile @ P6 complete. AECOM

collects samples from topt bottom of location of mid point only due to shallow water 1940 Depart RM 120 and head up to RM 13.5 for Final sample collection. Arrive @ RM 13.5 1950 1957 Vertical profile @ P1 completed 2000 Profile @ P2 completed. AECOM collects samples from top and bottom of P2 Profile @ P3 completed Profile & PH completed. AECOM collects samples from \$2030 Profile & PG completed.
2035 Profile & PG completed. AECOM collects samples from top and bottom. - 8 9/6/19

Project/Client LPR/USACE
Date 9/6/19 17 Diamond Allcali DU4/PWCM+CWCM 2045 Profile @ P7 completed Crew heads back to dock. 2100 TG offsite 2/6/19

18 Location Rutherford NJ Date 9/7/19 Project / Client LPR/USACE Diamond Alkali OU4 / PWCM TG onsite Weather: 70°F sunny Level D, PFD Purpose Finish oversight on PWCM Event 19D. TG meet with OSI crew and begin loading equipment on boat. Only one boat to be taken out today, AQEA are not present. Boat with Alex Allen + Jeff 5 35 Pydeski (OSI), Steve Howe + Mike Tatarelli (AECOM) and TG depart from dock. Arrive @ RM 10.2. Begin preparations for sampling across the transoct. OSI setting up YSI and ADCP. 6 n Begin measurements @PT Vertical profile completed. First reading during the ebb tide. Protile completed & PZ. AECOM 617 collects samples from top and bottom of PZ location. Protile @ P3 taken. 9/7/19

Location Rutherford NJ Project / Client LPR / USACE Diamond Alkali OU4/PWCM Protile collected @ P4. AECUM collects samples from surface and bottom of location. 640 Profile collected from P5. 644 Profile collected from PG. AECOM collects samples from top + bottom 650 Profile collected from P7. Crew departs and heads to RM 8.4 Arrive at RM 8.4, scope out the transect. 720 Perform vertical profile @PI 725 Profile @ PZ performed. AECOM collects samples from top + bottom 735 Profile collected @ P3. Profile collected @ P4. AECOM collects samples from top + bottom. Profile collected @ P5. Profile collected & PG. AECOM collects samples from top + bottom. Profile collected at P7. Very shallow water had to move location slightly. Crew departs from RM B. 4 and heads south on river to find salt front 9/6/19 Rite in the Rain

Location Rutherford NJ Date 9/7/19 Project / Client LPR / USACE Diamond Alkali OU4 / PWCM Salt ppt concentration recorded just past RR bridge. Reading was 4.3 ppt. Heading North to find point at 2.2 ppt. 2.2 ppt found just south of RR bridge, even with old abandoned house on shore. 830 Head upstream togather more salinity data as crew heads back to dock. Will continue PWCM event when the flood tide begins. 915 Arrive back at 1 Madison St. dock. Crewto meet back up once Flood tide begins. 1100 TG back onsite awaiting OSI and AECOM to arrive. 1125 Meet up with crew and board OSI's boat to prepare for flood tide PWCM sampling. 1135 Depart dock and head South 1208 Arrive at RM 8.4. Scout transect and prepare for vertical profiles and sampling. Vertical profile @ P.1 completed. 1223 Profile @ PZ completed AECOM collects samples from top + bottom.

Location Rutherford NJ. Date 9/7/19 Project / Client LPR / USACE Diamond Alkali OU4/ PWCM 1237 Profile at P3 completed 1243 Profile @ P4 completed. AECOM collects samples from top + bottom. Duplicate collected from surface 1250 Profile @ P5 completed. 1300 Profile @ PG completed. AECOM 1305 Profile @ P7 completed. Crew heads up to RM 10.2. 1315 Arrive @ RM 10.2 and scout trans-1320 Profile @ PI collected 1327 Profile @ P2 collected. AEcom collects samples from top + bottom.

1336 Profile @ P3 collected. 1340 Profile @ P4 collected. AECOM 1348 Profile @ P5 collected. 1352 Profile @ Plo collected. AECOM collects samples from top + bottom 1400 Profile @ P7 collected. Crew departs RM 10.2, back to dock. 1430 To offsite

# Attachment 3 Sample Tracking Log

#### SAMPLE TRACKING LOG

	LDL VOC LAB:	INORGANIC CLP LAB:
CLP CASE NO:	ORGANIC CLP LAB:	SUBCONTRACT LAB: Katahdin

SAMPLE ID	SAM DA	IPLE TE	SAMPLE TIME	MATRIX		DEPTH (feet)	LDL VOC CLP NO.	ORGANIC CLP NO.	INORGANIC CLP NO.	SUBCONTRACT ANALYSIS		QA/QC
190 - CE02 -T120 -PZAS - COM 9/6/19		/19	11:45	sw		A	_	_	-	SSC, POC, DOC		
198- CE02-7120 - 9485- CDM			12:05			В			_			
190- CE02- T120 -PGAS- CDM			12:25			A	_					
19D-cE02-T135 -P2BS-CDM			13:05			В			_			
19D- CEO2-T135 -P4AS-CDM			13:25			A			-			MS/MSD
19D- CEO2 - T135 - F4A5-CDM-100	1		13:25			A			_			Duplicate
, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,								Name and Aller a				

ANALYSIS SUMMARY: 55C= Suspended Solid Concentration / Poc = Particulate organic Carbon /
DOC= dissolved organic corbon. Poc/DOC shipped in one container